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# Air Force Materiel Command

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## Development Planning (DP)

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HQ AFMC/A5CC  
20 Apr 2010

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**Integrity ⬇ Service ⬇ Excellence**

- **Revitalizing Development Planning (DP)**
- **Description & Purpose of DP**
  - **SUPPORT THE WARFIGHTER!**
- **DP governance process**
- **Status**
- **Way Ahead**
- **Summary**

# Why revitalize DP/Sys Eng?

Weapon Systems Acquisition Reform Act of 2009 requires:

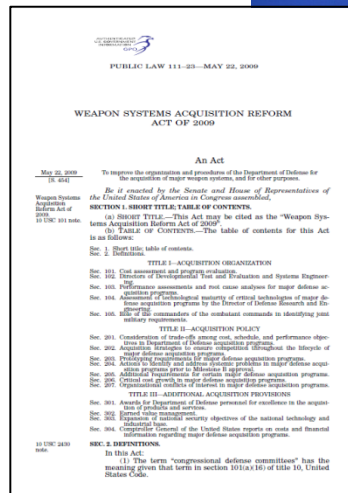
organizations & capabilities of the military departments with respect to... **development planning**...and identify needed changes or improvements"

SAE to "develop & implement plans to ensure the military dept has provided appropriate resources for: **Development planning and systems engineering organizations with adequate numbers of trained personnel**"

A 2007-2008 GAO

Acquisition Study found that:

- Only 134 of 268 critical technologies were accepted into a product's design based on more than lab demo of basic performance, tech feasibility, & functionality
- Programs that held Sys Eng events prior to beginning "development" experienced 20% less cost growth & 8-9 months less in IOC delays



**US Gov't leadership directed DP revitalization**

# Why revitalize DP/Sys Eng?

In 2008, SECDEF Robert Gates declared:

“...this department must ...stop programs that significantly exceed their budget or which spend limited tax dollars to buy more capability than the nation needs...we must ensure that requirements are reasonable and technology is adequately mature to allow the department to successfully execute the programs...”

Dec 08: New DoDI 5000.02 Acq Regulation mandating:



(a.) New Acquisition milestone:  
Materiel Development Decision  
(MDD)



(b.) New policy: Competitive Prototyping in  
Technology Development Acquisition Phase



(c.) New policy: Conduct Preliminary Design Review  
(PDR) prior to Milestone B



***DP ensures requirements are reasonable & technology is mature and is essential to plan, budget & execute IAW the new acquisition regulation***



# Why revitalize DP/Sys Eng?

## CSAF's/SECAF's Acquisition Improvement Plan (AIP)

### Initiative #2

#### Problem Statement

- *"Overstated and unstable requirements that are difficult to evaluate during source selections"*

- *"Ensure acquisition involvement and leadership in support of the lead command early in the development of program requirements"*

*...resulted from...*

#### **Events - circa 1989-1993 - and their unintended consequences**

- **Acquisition Workforce reduction**
  - Early Systems Engineering and Development Planning functions virtually eliminated
  - As a consequence, there was erosion of acquisition expertise and processes that supported the lead command early in the development of program requirements
- **Significant reduction of specifications and standards - thru 1998**
  - Acquisition expertise in translating operational requirements into system requirements eroded

**AIP #2. Improving the Requirements  
Generation Process, is built around  
"Development Planning"**



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# Acq Improvement Plan (AIP)

## Development Planning is Critical

### Air Force 2008-2010 Strategic Plan

- *Reinvigorate AF Nuclear Enterprise*
- *Win Today's Fight*
- *Develop & Care for Airmen & Families*
- *Modernizing Aging Air & Space Inventories*
- **Recapture Acquisition Excellence**

### Acquisition Improvement Plan (AIP) - 5 Initiatives

- #1- Revitalize the Air Force acquisition workforce
  - **#2- Improve requirements generation process**
  - #3- Instill budget and financial discipline
  - #4- Improve AF major system source selections
  - #5- Establish clear lines of authority/accountability within acquisition organizations
- **2.1- Ensure early acq/leadership involvement in reqts development**
    - Translating Operational Requirements to System Requirements
    - Support to High Performance Teams
    - Requirements/Acquisition Strategy Panel (R/ASP)
    - **Development Planning**
  - 2.2-Senior Leadership Certification of Requirements
  - 2.3- MAJCOM Coordination on System Requirements Documents (SRDs)
  - 2.4- Minimize Key Performance Parameters
  - 2.5- Require Incremental Acquisition Strategies

**Institutionalize each action with policy, AFI guidance and training**

Headquarters United States Air Force

#### Acquisition Improvement Plan

*Prepared by the Office of the Assistant Secretary of the Air Force  
(Acquisition)  
4 May 2009*



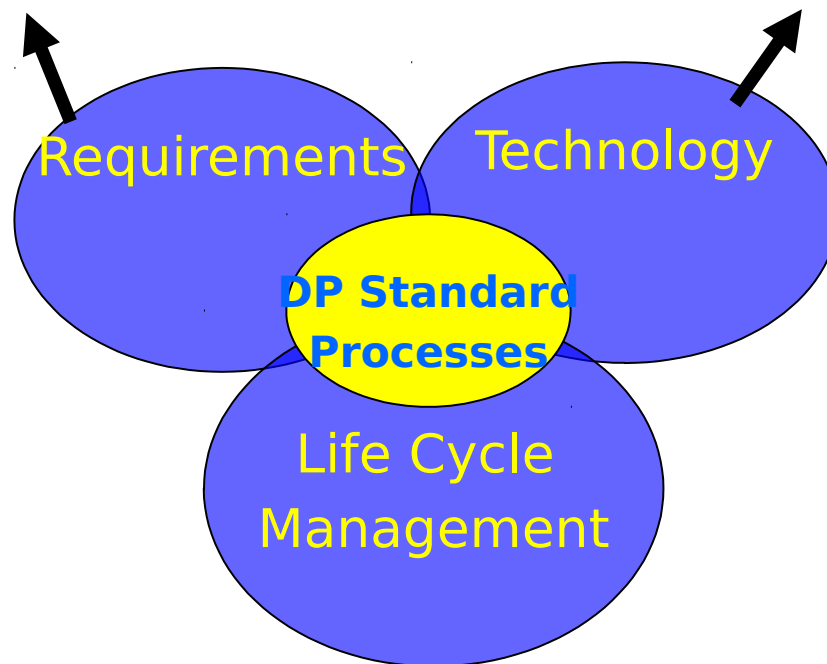
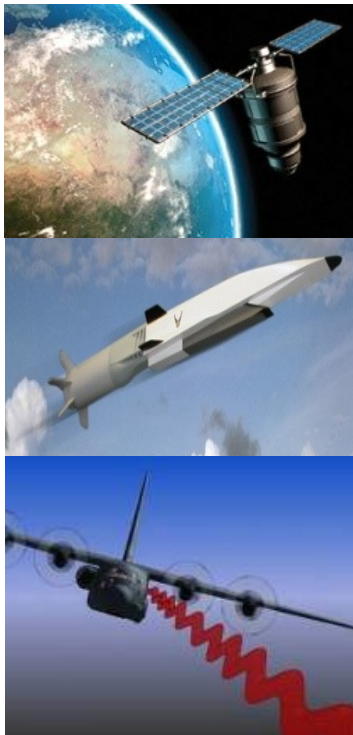
*Integrity - Service - Excellence*

# Definition of DP

**“DP is a collaborative process bridging warfighter-identified capability needs to planning for acquisition materiel solutions”**

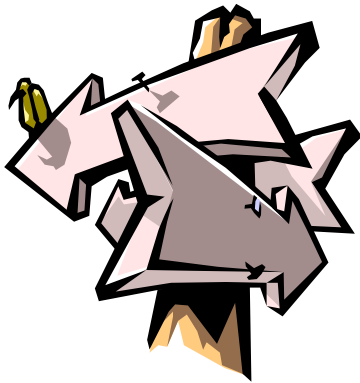
- DRAFT AFMCI 10-605, “Development Planning”

- Bridge warfighter capability needs
- Evaluate system-of-systems concepts
- Incorporate life-cycle planning
- Understand technology gaps
- Identify/assess risks
- Launch high confidence programs



# Purpose of DP

## DP helps user:



**Define Materiel  
Solution  
Courses Of  
Action**



**Produce  
attainable,  
affordable,  
evaluable  
requirements**



**Craft  
accurate,  
high-fidelity  
POM inputs**

***DP helps launch high-confidence programs***

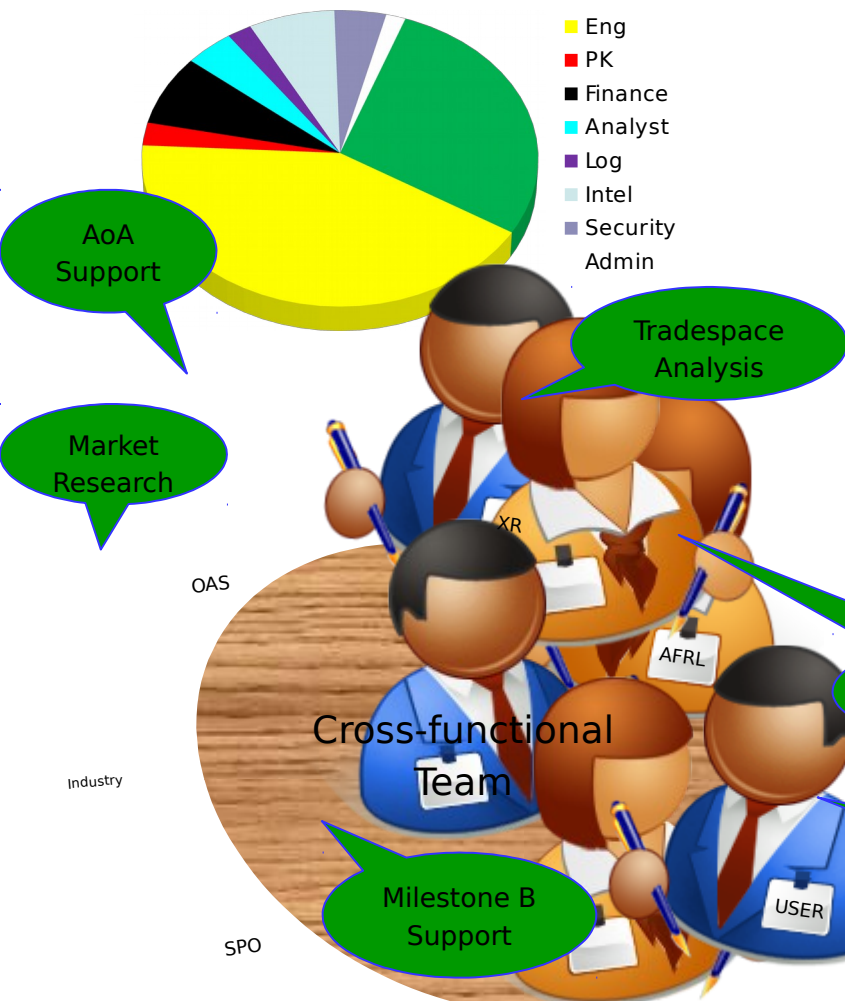


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# DP Team Provides Solution Options

DP Skill Sets

- PM
- Eng
- PK
- Finance
- Analyst
- Log
- Intel
- Security
- Admin



## DP Team

collaborates to provide

- Concept Definition/Tradespace Analysis
- Early Technology Evaluations
- AoA Support
- Material Options
- Market Research
- Advanced Concept Studies & Analysis
- Capability Roadmaps/Development Plans



...to define the  
solution trade  
space

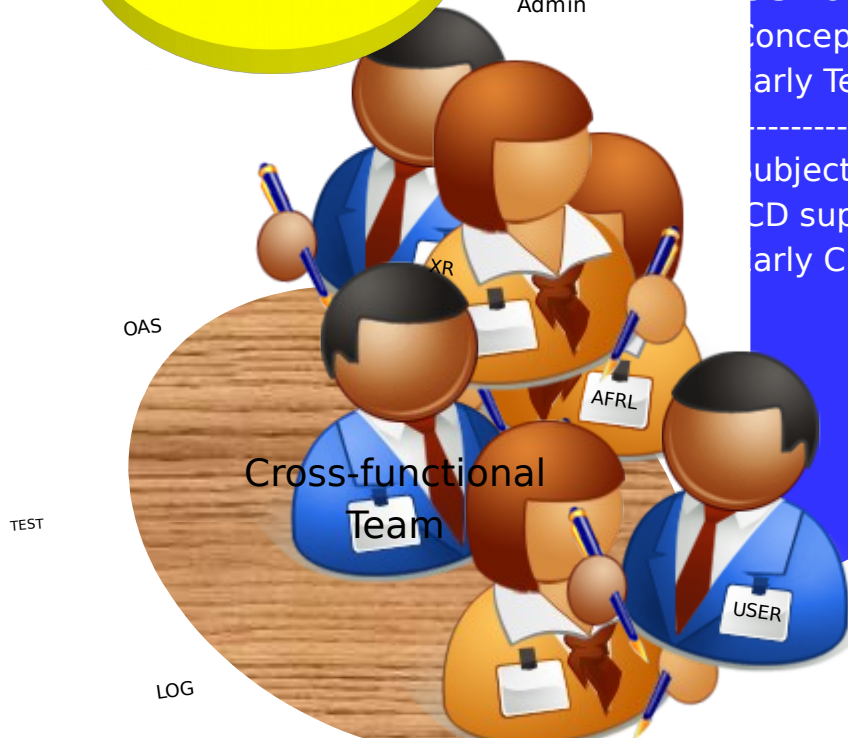
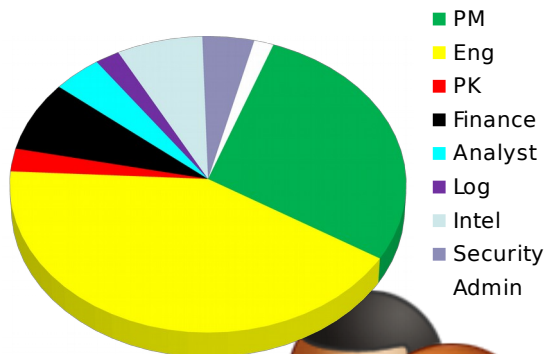
***DP defines materiel solution courses of action***



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# DP Informs Requirements Generation

DP Skill Sets



Cross-functional  
Team

## DP Team

Collaborates to provide

Concept definition & Tradespace analysis  
Early Technology Evaluations

Subject Matter Experts (SMEs) for CBA  
CD support & analysis  
Early CDD support

**Requirements  
that are:**

Measurable  
Testable  
Attainable  
Evaluatable  
Executable

AFROC Validation  
&  
AFMC, SAF/AQ, &  
AFOTEC Certification

*produces feasible, affordable, evaluatable requirements*



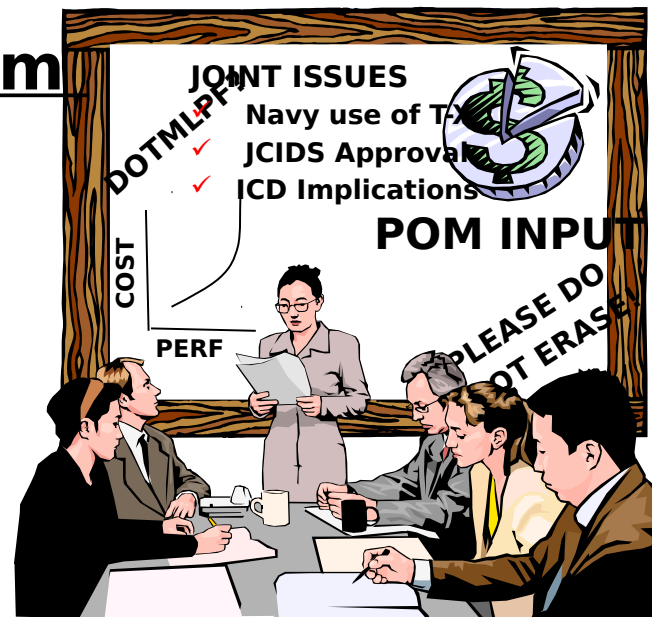
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# DP Assists User with POM Estimates

## Ongoing DP Effort:

### T-X) Advanced Pilot Training System

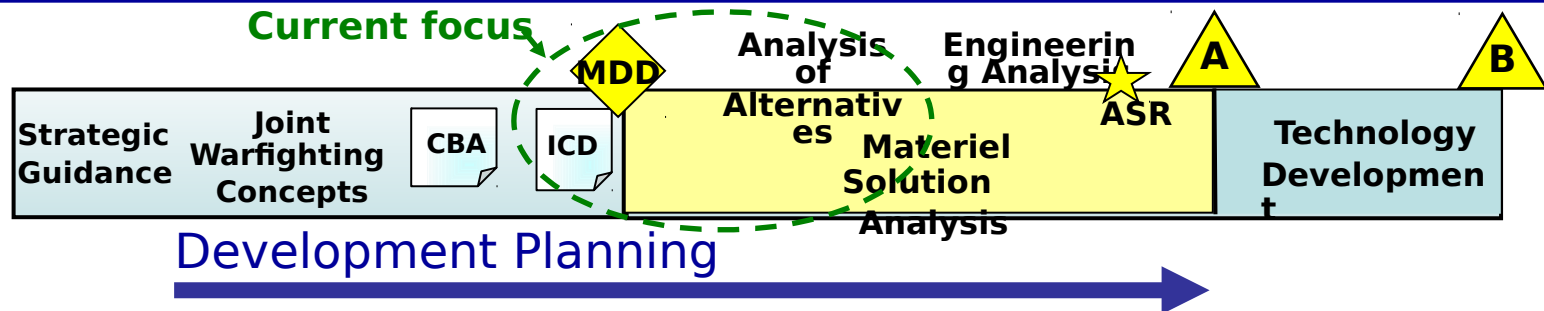
- DP Team participated in AETC's Capabilities Based Assessment (CBA)
  - Early acquisition involvement
  - Re-focused T-X requirements from "aircraft" to "training system" concept
- Significantly improved AETC budget inputs
  - AETC's initial cost estimates did not reflect requirement for two contractors through Technology Development Phase
    - DP team ensured proper cost estimates



***DP crafts accurate, high-fidelity POM estimates***



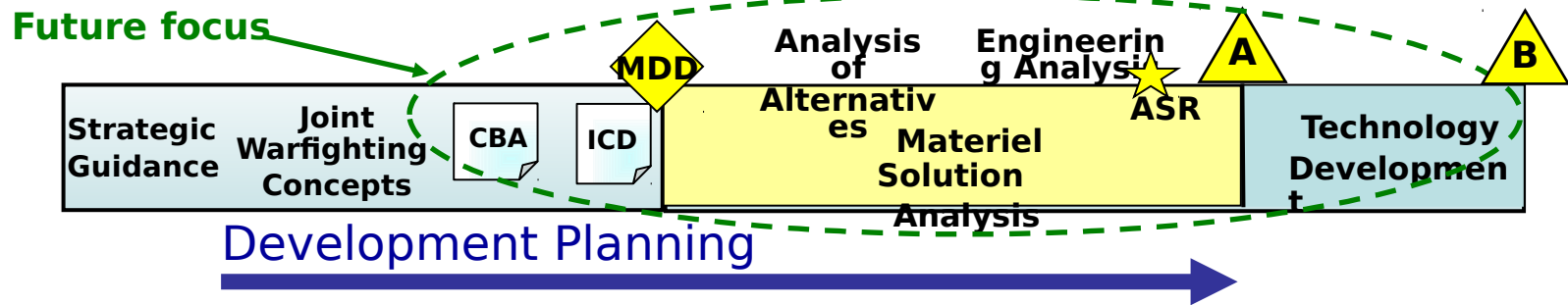
# DP Focus



- Current DP efforts focused on specific User identified needs
- Need to consider a more proactive, mission focused approach that:
  - Links CBA/P and development planning actions
  - Leverages and informs technology planning and investments
  - Provides consistent mission-based system-of-systems assessments
- Requires:
  - DoD and AF level policy that directs early, proactive DP
  - Consistent AF level framework for assessing needs and identifying solutions
    - Ownership of Integrated Capabilities
    - Consistent management framework - from needs assessments to fielded capabilities
    - Funding for consistent analytic framework - strat planning thru fielded capabilities
    - Consistent resources and processes supporting pre-ICD trades and strategies
    - Skilled, experienced people



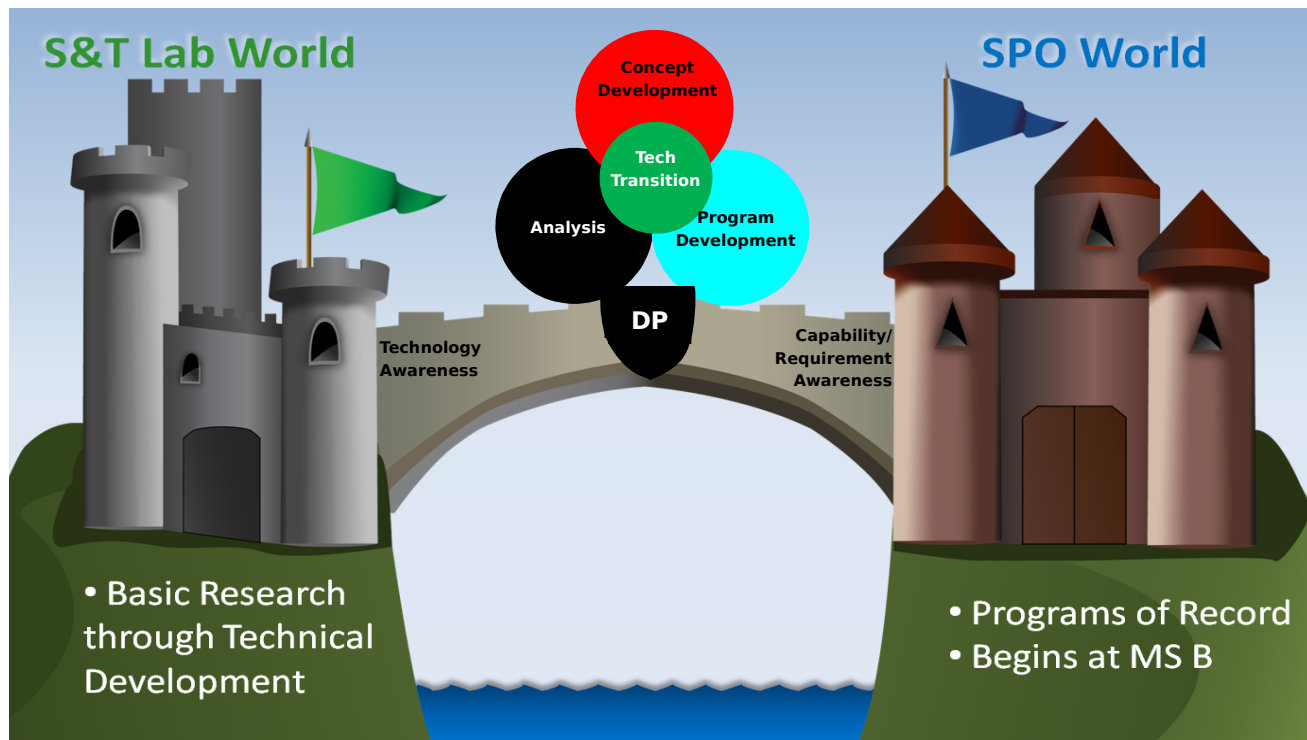
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# DP and S&T Linkage



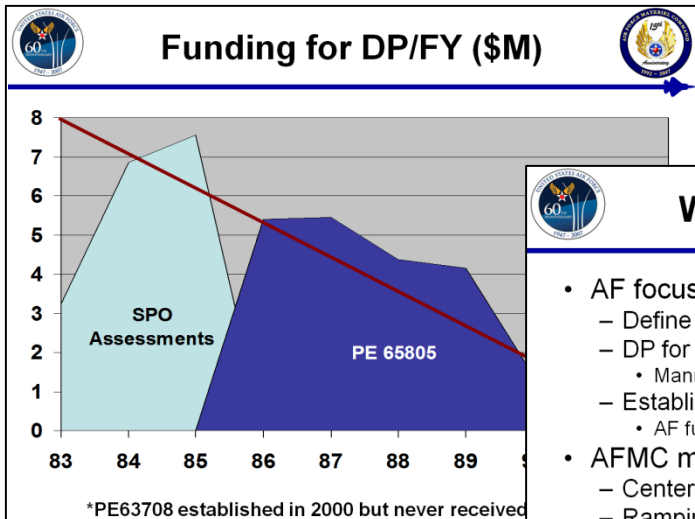

Reaches back into  
AFRL to identify  
necessary  
technology  
maturation

**Development  
Planning**

Looks ahead into the  
SPOs to let them  
know what's on the  
horizon

# Requirements Analysis & Maturation (RAM) Program Element (PE)



In 2008, AFMC/CC saw the need for revitalized DP and advocated the re-establishment of a robust capability


### What do we need to do?

- AF focus on developmental planning
  - Define realistic req'ts, focus tech, assess threat
  - DP for "N-NGF" must address questions
    - Manned? Industrial base? F-22 shortfalls? Technology?
  - Establish DP as an AF program
    - AF funded, AFMC/CC managed
- AFMC moving forward
  - Center-level DP has been established/re-established
  - Ramping up HQ oversight of limited DP resources
    - Establish a collaborative environment with MAJCOMs
    - Deliver optimum materiel solutions for warfighter
    - Establish a strategic sight picture of USAF DP needs
    - FY10 POM submission to rebuild DP capability


**Need MAJCOM to MAJCOM interface for optimal early developmental planning**


### Take away




1 year before F-4D 1<sup>st</sup> Flight  
Planning began for the F-15



3 years before F-15A 1<sup>st</sup> Flight  
Planning began for the F-22



6 years ago F-22 1<sup>st</sup> Flight...  
We are behind the curve



Establishment of RAM PE and an  
AF-wide DP Governance Process



# DP Governance Process



- DP Governance Structure established
  - 26 Jan 10 – DP Charter & FY10 Strategic Plan co-signed by AFMC/CM and AFSPC/CM
- Orchestrates DP - Supports the Warfighter!
  - Direct & monitor execution of RAM PE
  - Prioritization of AF DP workload

## DP efforts are prioritized via a disciplined process:



1. Assess effort value to the Air Force (based on Users' inputs)



2. Generate draft, resource constrained prioritized list of DP efforts



3. Apply professional military judgment to produce a final list



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# DP Governance Structure

***AF Senior Leaders direct DP workload execution***

**DP Council**  
(Strategic)



## Co-Chair

AFMC/CV,  
AFSPC/CV

## Membership

SAF/AQ (Deputy), SAF/US (Deputy),  
MAJCOM/CVs/CAs, AF/A2, AF/TE, AFOTEC/CC,  
AF/A3/5, AF/A4/7, AF/A8, AF/A9, and AF/A10

## Frequency

Annually  
(First: 27 Oct 09)  
(Next: Jun 10)

**DP Board**  
(Operational)



## Co-Chair

AFMC/A2/5,  
AFSPC/A5

## Membership

MAJCOM A2/3/4/5/6/7/8/9, and staff functionals  
as deemed appropriate by each MAJCOM, HQ  
AFMC/EN, Materiel Centers, AFRL, AF/A2R,  
AF/TE, AFOTEC, AF/A4L, AF/A5R, AF/A5X,  
AF/A8X, AF/A9R, AF/A10, SAF/AQR, SAF/AQX,  
and SAF/USA

## Frequency

Semi Annually  
(Sep 08 & Jun 09)  
(Next: 24 May 10)

**DP Working  
Group**  
(Tactical)



## Co-Chair

AFMC/A5C,  
AFSPC/A5X

## Membership

MAJCOM A2/3/4/5/6/7/8/9 as deemed  
appropriate by each MAJCOM, HQ AFMC/EN,  
HQ AFMC/FM, Materiel Centers, AFRL,  
AFISRA/A5R, AF/A2DP, AF/A5RP, AF/A5XC,  
AF/A4LM, AF/A8XC, AF/A9, AF/TE, AFOTEC,  
SAF/USAP, SAF/AQRE, SAF/AQXR, and  
SAF/AQRT

## Frequency

Quarterly  
(Next: 28-29 Apr  
10)



# The Results: FY10 DP Efforts





	Effort Name	Center	User
1	NORAD & US NORTHCOM Surveillance	ESC	NORAD
2	Interoperable Multifunction Advanced Data Link	ESC	ACC
3	Ext/Int CONUS Air Wide Area Surveillance	ESC	AF/A5XC
4	Irregular Warfare/Improvised Explosive Device Capabilities Plan	ESC	AF/A5RQ
5	MQ-X Unmanned Aerial System	ASC	ACC
6	Project IX (SOF mobility platform)	ASC	AFSOC
7	Joint Future Theater Lift (Part II)	ASC	AMC
8	Control and Reporting C2 (CRC C2) Radar Replacement	ESC	ACC
9	CRC C2 Engine AoA Support (pre MDD)	ESC	ACC
10	T-X Advanced Pilot Training System	ASC	AETC
11	Next Generation Air Dominance	ASC	ACC
12	Airborne Electronic Attack System of Systems	ASC	ACC
13	Common Vertical Lift Support	ASC	AFGSC
14	Enterprise Infrastructure Program	ESC	AFSPC
15	Light Mobility Aircraft (LiMA)	ASC	AMC
16	Common Core Capability Development	ASC	ACC

	Effort Name	Center	User
17	Satellite Operations Enterprise	SMC	AFSPC
18	CAF DE Roadmap	AAC	ACC
19	Selectable Effects Weapon	AAC	ACC
20	Battle Space Awareness/Technical Intel	SMC	AFSPC
21	Missile Warn/Missile Defense Commercially Hosted Infrared Payload	SMC	AFSPC
22	OA-X Light Attack Aircraft	ASC	ACC
23	Conventional Strike Missile	SMC	AFSPC
24	NexGen Tactical Laser Weapon	AAC	ACC
25	Non-Kinetic Counter Electronics	AAC	ACC
26	Space Environmental Monitoring	SMC	AFSPC
27	Spacelift DP	SMC	AFSPC
28	Boosted Penetrator	AAC	ACC
29	Missile Warn/Missile Defense Joint Overhead Persistent Infrared Ground Study	SMC	AFSPC
30	Launch Range DP	SMC	AFSPC
31	Presidential Aircraft Recapitalization	ASC	AMC



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# Ongoing DP Effort Examples

Effort		Ctr	DP Team Good News Story	Products Supported					
				Tech Readiness Assessment	Trade-space Analysis	Concept Characterization	Prelim POM estimate	ICD, MDD, CDD	AoA prep
	Advanced Pilot Training System (T-X) USER: AETC	ASC	<ul style="list-style-type: none"> <li>Significantly strengthened User's POM estimate</li> <li>Prepared User for joint issues – achieved a “paper” JROC</li> </ul>	YES	YES	YES	YES	YES	YES
	Common Vertical Lift Spt Prgm (CVLSP) USER: AFGSC	ASC	<ul style="list-style-type: none"> <li>Showed User cost challenges of single aircraft CONOPS</li> <li>Helped formulate better rqmts for CDD &amp; SRD</li> </ul>	YES	YES	YES	YES	YES	YES
	Light Mobility Aircraft (LiMA) USER: AMC	ASC	<ul style="list-style-type: none"> <li>Prepped User for MDD and program briefings to CSAF</li> <li>Helped User avoid rqmts that would drive solution away from COTS/GOTS aircraft</li> </ul>	YES	YES	YES	YES	YES	YES
	Ground Moving Target Indicator (GMTI) USER: ACC	ESC	<ul style="list-style-type: none"> <li>Tackled HAF/A2 &amp; SAF/AQI quick-turn study (90 days)</li> <li>Providing acquisition support to upcoming large-scale AoA</li> </ul>	YES	YES	YES	YES	N/A	YES



# Ground Moving Target Indicator (GMTI) DP Trade Study

## Background

- SAF/AQI and HAF/A2 directed 90 day study
- GMTI DP team led by ESC/XR: AFISRA, AFMC/A2, AFMC/IS, ASC/XR, 303 AESW, 851 ELSG, AFRL, MIT/LL, and OO-ALC
- 60 inputs from industry, AF, DoD & NRO labs
- Analyzed cost-benefit of and prioritized GMTI tech solutions

## Issues

- GMTI DP Team identified critical Planning, Collection, Processing, Analysis, & Dissemination (PCPAD) capability gaps
- Produced 30+ Potential Materiel Solution quad charts with supporting data to support FY12 POM submission
- Trade study results briefed to GMTI

Summit on 5 Mar 10

## Bottom Line

- Demonstrates use of DP process to support assessment of high priority Warfighter ISR need for use in FY12 POM build
- Provided “jump-start” for analytic effort supporting JSTARS AoA

# Way Ahead for DP

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- **FY10 DP Execution is underway**
- **FY11 Prioritization is in progress, vetting to occur thru DP Governance**
  - **Working Group - 27-28 Apr**
  - **Board - 24 May**
  - **Council - 28 June**
- **FY12 POM deliberations continue**
  - **DP needs your support!**

# Summary

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- **DP Exists to support the Warfighter**
- **DP workload gets prioritized by the User at the highest levels**
- **We're executing FY10, prioritizing FY11, & advocating FY12 resources**



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# All leading to...



***ENHANCED COMBAT  
CAPABILITY FOR THE  
WARFIGHTER***



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